

POPULAR **Computing** **WEEKLY**

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NEWS DESK

**Amstrad outsells
IBM PCs**

**June launch for new
Commodore Amigas?**

**1986 best sellers:
Gallup's chart
of the year**

Melbourne House sells out to Mastertronic

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REVIEWS



Illustration by Alan

**Chocks away
with Tomahawk
and Gunship**

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for details**

SOFTWARE

**Locoscript errors
removed with
Locospell**





By Stavros Fasoulas

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THALAMUS



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Mastertronic buys Melbourne House

MELBOURNE House, publisher of *The Hobbit and The Lord of the Rings* for the Amstrad CPC, has been sold to budget publisher Mastertronic.

The sale gives Mastertronic its first full price software label, which will continue to be called Melbourne House, and will operate separately from Mastertronic's own software activities.

Over £1 million

Melbourne House (Publishers) has cost Mastertronic over £1 million, but the Australian side of the company, Beam Software (game development and programming) and SLM Australia (distribution) is not included in the sale, and will continue to be run by Alfred Morgan and Pamela Beeson, Melbourne House's founders.

However, the Australian holding company for the group, Melbourne House Pty, will change its name - rights to the title 'Melbourne House' were included in the sale.

Melbourne House staff are likely to move from their building in Hampton Wick, Surrey, to Mastertronic's offices in London, and some redundancies are inevitable.

'Melbourne House will remain entirely autonomous, and in similar degree their products will be competing with ours,' said Frank Herman, director of Mastertronic. He confirmed that Mastertronic would continue to source software from Beam in Australia, to be published by Melbourne House.

Herman is also considering the possibility of releasing

some of Melbourne House's impressive back catalogue at reduced prices. 'The back catalogue certainly has value, not necessarily at a new budget price, although I'd love to see a £1.99 list - that's a lot of life left in it.'

No books

Mastertronic does not intend to take over the book publishing side of the company.

For Melbourne House, director Alfred Morgan stated, 'Herman and I will retain our full interest in Melbourne House Australia. We are simply selling the UK company, with which we will continue to have a close relationship.'

He added, 'This move will allow us to expand our licensing possibilities in the US and Japan.'

PCW protector

SEAL-IT TYPE is a soft moulded plastic cover for the PCW8250, to guard against damaging the keyboard with spilled coffee or other liquids.

The clear plastic stretches over the keyboard so it is easily, and costs £7.50 plus £1.25 p and p from Radio Enterprises.

The company also runs a printer ribbon re-inking service. Details from Radio in Romney Court, 279 St Margaret's Road, Tickenham, Middlesex TW1 1PW, 01-892 0215.

Acorn OEM's grow

ACORN'S OEM operators continue to grow with the news that the news agency Reuters has now taken delivery of its 3000th Application



Master circuit board

Processor Module, based on the BBC micro and featuring local area network.

Acorn's custom systems division is now making the BBC Master Series modules available in complete form for companies who wish to have the hardware customised for their specifications.

US firms to join Microprose

MORE American companies are set to cross the Atlantic to establish their own UK divisions and offices, following Microprose's split from US Gold in the end of last year, and the savings of its UK arm in Gloucestershire.

Microprose itself, the American simulation specialist, is on the point of announcing a joint venture agreement in this country with a 'major American entertainment software company'.

Microprose's UK manager,

Steven Ball, would not name names but expects a formal announcement to be made this week.

'We have signed a long term agreement with them to joint venture in the UK. This company will have their own building and staff here, but we will be doing their sales and marketing.'

The identity of the company has been variously suggested as Datapoint, Mindscape, Epyx, However, Ball says categorically that he has had no discussions with Epyx, whose contact with US Gold still has some months to run.

Steven Ball of Microprose



Amstrad topples IBM in survey

AMSTRAD ousted IBM as the business market during December, according to a survey conducted by market research company Horrox.

The survey gives Amstrad a 35.3% of sales, with IBM holding 24.9%.

However, the survey did not restrict itself to sales of PCs and PC-compatibles. Amstrad's PCW machines were included in the figures, as were other IBM machines.

It also did not include consumer retail outlets, such as Dixons, nor direct sales from the companies themselves. These two factors may well go some way to cancelling each other out.

For Amstrad, a spokesman commented, 'We are obviously delighted that our push towards the business and corporate market has paid off as soon - within three months of launch.'

Mastertronic sets up coin-op label

MASTERTRONIC has had a busy week. While the UK side of the company was acquiring Melbourne House, the US division has been setting up an operation, called Arcade Systems, to produce games for the arcade.

Arcade Systems will be based in California's Silicon Valley, and is already looking for video games developers in the US.

1st word on PC1512

The Amstrad PC1512 has gained another word processor - OST's for Word Plus, an implementation of its RT word processor.

OST's Chris Schoyemaker commented, 'As Word Plus has been written specifically to make full use of the Amstrad's features, including the mouse and dual windowing software.'

The Word Plus will cost £29.95. Details from OST at Cambridge Science Park, Milton Road, Cambridge CB4 4NW, 0224 31991.

Modem House calls in police and liquidator

MODEM HOUSE, the Essex-based communications equipment seller, has gone into voluntary liquidation, at a time when complaints are flying back and forth among UK modem manufacturers, which have led to two police investigations by Devon CIO.

One allegation which is being followed up, has been made by Exeter-based Modem House against another company: the second

has been made against Modem House's director Keith Ross.

Detectives Sergeant Hooper, investigating the complaints, could not give any details. "It's early days yet, and it would be wrong to say anything now. I can't tell whether either complaint will be substantiated, but there is an inquiry."

"Two complaints are being investigated, one made by Ross, and one being made against him."

Keith Ross himself confirmed that Modem House had called the police in.

"They've been investigating Delta from our company since December 14." However, he denied all knowledge of the second inquiry.

Modem House is the trading name of Sci-Tek Future Science and Technology which is being wound up under the 1986 Insolvency Act. A creditors' meeting was held on February 10.

Hubbard plays Delta

THE musical talents of Rob Hubbard can be heard on Delta, the second title from Thomson, which scored a minor hit with Spectrum.

Delta is a no-foddy-based shoot 'em up for the Commodore 64 at £9.99 (tape) and £14.99 (disc). It is due for release at the end of the month.

Heathrow on PCW

HEATHROW Software is converting two of its older programs to the PCW6256.

Southern Delta, the locomotive simulation, and Heathrow Air Traffic Control are due for release in the next two weeks, and will be able on a single 3 inch floppy for £10.99.

Mike Male - Heathrow author



Software Hotlines

Just felt like trucking along the freeway with the top down and the requisite blunder in the passenger seat, complete with hair blowing in the wind? Then you might be playing Out Run, the latest coin-up hit from Sega.

The great graphics and sound track has got the California dreamers queuing up around town - the same cannot be said of the least multi-player game, however. The questers have given Rich and Run, a one to four player football game from Taito, the red thumb down - and who can blame them with the USA ruled as 'the best running team'. Maybe that should be a running joke.

All the America's Cup coverage on Channel 4 depicted a great way to spend the whole of January - on a beach-front sofa, if only Selling from Antidivision could simulate this.

When you have to settle for, however, is the most complete ocean racing simulation to date, which allows you to design your own yacht then race it in competition with computerized other racers.

Written by the ODE programming team, the sea efforts are so good they ought to design a ladder with the thing. My first impressions? If you like that kind of thing - it's swell.

Or should that be swell - which is how ODE might well describe its latest learning



Setting on ODE

deal, based on the deeply strange IPG comic book!

This licence has been, shall we say, knocking about a bit, mainly because the comic is so bizarre, but ODE has been brave enough to take up the challenge.

The actual game, Rubbish Men, just on Commodore 64 and MacInt, Spectrum and Amstrad (also) will have you playing the part of Uncle Pig, in which you must build up pages of the magazine, collected from three sub-games, each featuring an infamous Dick character.

Delta Four is setting up a new Southampton-based advertisers label called Abstract Concepts, headed by mystery women, photographer, salesperson turned author, Anna Prokass.

Abstract has been specifically created to provide a medium for adventures that tackle 'more serious issues', like its first release (but March-ised) Shakespeare (see screen shot below), in which you control the destiny of a young lass, Asola, who is out to avenge the death of her family - violence being one of the issues being explored here. I'd guess. Sounds interesting.

John Cook

Featurettes - the palatial side of Delta 4



Asola stood on the desolate plains of Brabant at the entrance to the Chateau. To the north, the city of the Targers and the towering citadel of Arcton, crowned high above a fertile valley at the edge of the Rhine.

It could have been, indeed, the home of the gods. But here, the gods had fled.



machines with over 250K Ram, line and box drawing, improved speed, and 40 programming function keys.

Wordstar Professional Release 4 is set for release at the end of March, and will cost £459.99 (inclusive of VAT, training users of Microsoft, Wordstar Professional and Microsoft 3 will, however, be able to upgrade at £99 up to the end of July.

Yie Ar tops charts for 1986



MARTIN, who have topped the annual charts for the second year running, according to Gallup's compilation of the best-selling titles for 1986.

While *Way of the Exploding Fox* was the runaway number one in 1985, last year's top game was Imagine's *Yie Ar Eung Po*.

1986 was a good year for Imagine, the Ocean label, its

Green Steel also appears high up in the annual chart, at number four.

Elite Systems notched up three out of the top ten of 1986, with *Commando*, *Shogun and Goshin* and *Paperboy*, while Megasoft has 11 titles in the top 30, including the evergreen *Activision One Simulacra*, second only to *Yie Ar Eung Po*.

The 30 best-selling games

last year were as follows: 1) *Yie Ar Eung Po* (Imagine); 2) *Panzer One Simulacra* (Megasoft); 3) *Commando* (Elite); 4) *Green Steel* (Imagine); 5) *Shogun and Goshin* (Megasoft); 6) *Shogun and Goshin* (Megasoft); 7) *Paperboy* (Elite); 8) *Panzer One Simulacra* (Megasoft); 9) *Shogun and Goshin* (Megasoft); 10) *Panzer One Simulacra* (Megasoft); 11) *Winter Games* (Galea/LDS Gold); 12) *Spillout* (Megasoft); 13) *ACF* (Cassidy); 14) *Finian's Rainbow* (Elite); 15) *Kane* (Elite); 16) *Shogun and Goshin* (Megasoft); 17) *Elite* (Megasoft); 18) *One Man and his Dog*; 19) *Action* (Megasoft); 20) *Computer* (Elite); 21) *Yie Ar Eung Po* (Imagine); 22) *Yie Ar Eung Po* (Imagine); 23) *Yie Ar Eung Po* (Imagine); 24) *Yie Ar Eung Po* (Imagine); 25) *Yie Ar Eung Po* (Imagine); 26) *Yie Ar Eung Po* (Imagine); 27) *Yie Ar Eung Po* (Imagine); 28) *Yie Ar Eung Po* (Imagine); 29) *Yie Ar Eung Po* (Imagine); 30) *Yie Ar Eung Po* (Imagine).

Incidentally, 1985's number one, *Fox*, was number 31 on the 1986 chart.

Mirrorsoft has new strategy with PSS

THE Mirror Group, better known for its national newspapers, is expanding its interest in the software industry with the acquisition of a majority shareholding in PSS, the strategic games publisher.

PSS will now belong to the same estate as Mirrorsoft and software wholesaler Mirrorsoft.

Gary Mapp, co-founder and director of PSS commented that the Mids would change at the company as a result of the deal. "We will continue as a separate company, we are keeping our offices in Coventry, we're not losing any staff, in fact, the only real difference is that we and Mirrorsoft will be co-operating in joint marketing ventures."

PSS's next new title will be *Storm* and *Fortress America*, both, of course, strategy/simulation.

New Amigas set to appear in June

COMMODORE'S new Amiga, the A500 and A2000 (see *Popular Computing Weekly*, January 28) are now widely expected to be scheduled for launch at the Commodore show in June this year at London's Royal.

No specific comment was available from the company about the launch dates, and the new machines will not be in evidence at next week's Which Computer? show, where Commodore will demonstrate new business software for the current Amiga, and a new range of PC AT compatible machines, the PC40 series.

This follows the publication of improved financial results for the company for the quarter ending December 31, 1985.

Commodore International reached a profit of \$21.8 mil-

lion (£14.5 million) on sales of \$270.8 million (£180.8 million) over the three reports. This compares with a higher sales figure (\$309.2 million (£228 million), but a net loss of \$53.2 million (£39.5 million) for the corresponding period in 1985.

Commodore International's president, Thomas Barragan, commented, "These results further demonstrate a profit turnaround and have contributed to a significant improvement in the company's financial position."

On the subject of machine sales, he added, "Unit sales of the Amiga and IBM PC compatible computers were at the highest quarterly levels since the launch of these products with the Commodore 64C and 128 continuing to dominate the majority of our unit mix."

Activision's losses increase

ACTIVISION, the games software company based in Mountain View, California, is continuing to show a financial loss, with the news that its third quarter results report a \$3.8 million (£2.8 million) deficit. This is despite an increase in sales from \$5.8 million (£3.8 million) to \$8.6 million (£6.4 million).

Apple tablet

THE Kura II/OS is a cordless pen plus graphics tablet add-on which has been designed specifically to operate with the new Apple IIGX machines. Manufactured in the US, it will be sold in the UK by Tachas, of Basing, London, for £395.

Tachas also distributes Kura's Postmaster Plus, also a



tablet plus cordless pen, but for IBM compatible and MS232 equipped computers, at £235.

Details from Tachas at Meridian House, 100 Hanger Lane, Basing, London W5 1ET, 01-881 0321.

PC Gem graphics

KUMA Computers has followed up the release of *K-Spread 2* with *K-Graph 2*, a Gem-based business graphics package for IBM compatibles, but targeted specifically towards the Amstruc PC range.

The program will display graphic data in the form of pie charts, line and area graphs, and a variety of bar graph types. It will also integrate with the spreadsheet *K-Spread 2*.

K-Graph 2 costs £49.95. Details from Kuma at 12 Haverhill Park, Pangbourne, Bucks, 07367 4335.

Sue Townsend THE GROWING PAINS OF ADRIAN MOLE

PROGRAM BY LEVEL 9



"This program contains the complete version of **'The Growing Pains of Adrian Mole'**. Based on the famous British comic book, and adapted by Level 9, the game allows you to write Adrian with his friends, do his homework, go to school, and more. And your favourite characters are all available through the program. **'The Growing Pains of Adrian Mole'** is available on IBM PC, IBM compatible, and on the Amiga and Atari computers. It is also available on 16-bit home computers.

IBM II versions not included.

Produced by Mosaic Publishing Ltd

The Growing Pains of Adrian Mole is available from all good software merchants. If you have trouble finding it you can buy directly from Mosaic.

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IBM PC/XT/AT 128K/256K	£9.95	15 February 1989
IBM compatible 128K/256K	£9.95	15 February 1989
Amiga 500/600/800	£9.95	15 February 1989
Amiga 500/600/800	£9.95	15 February 1989
Atari 500/600/800	£9.95	15 February 1989
Atari 500/600/800	£9.95	15 February 1989
Atari 500/600/800	£9.95	15 February 1989
Atari 500/600/800	£9.95	15 February 1989

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Star Wars licence won by Domark

DOMARK has chalked up another deal that is certain to catch the attention of the games playing public, the rights to produce Star Wars. The Empire Strikes Back and Return of the Jedi, all multi-million dollar grossing movies, as home computer games.

The roles had already been released as coin-op machines by Atari (from which Domark bought the licence) and games cartridges by Parker, but this will be the first time any have appeared on a home computer in the UK.

Planned as a trilogy, the first release, Star Wars, will be based on the Asian arcade game, but "modernised and refurbished," for the home computer market.

Said Domark's Dominic Whittaker, "Although it's quite old, it's a damn good shoot-em up... one of the I've actually played."

The personnel for the programming team have yet to be finalised, but the primary contender is described as "a Star Wars fanatic."

Domark is also hoping to incorporate digitised speech into the home computer version — a major feature of the original. The title will be released on Spectravox, Amstrad CPC and Commodore 64 — and Atari ST — "at the PCW show or before," priced at "£15.95 or less."

Apple cuts prices amid 'open Mac' rumours

APPLE has announced a £300 price cut in its Macintosh Plus — but is giving no reason for the unexpected generosity.

However, the drop from £2,299 to £1,999 coincides with renewed rumours of the long-rumoured 'open Mac' — a machine designed to be expandable in the manner of the Apple II and IBM PC.

A report in the latest issue of trade newspaper Microscope says that Apple has been showing the new machine to dealers, and expects a worldwide launch in the first week of March.

Microscope lists the provision of six slots to accept expansion boards, a 50000 processor (the full 32-bit version of the 68000), 4Mb of Ram, a quadruple density disc drive giving 1.6 megabytes of storage, a colour display in 4:4 size, and a three-bay design.

At various times, all of these have been suggested as improvements to the Mac design. But the most recent reports from the US strongly suggest that Apple would be unable to implement all of them in the next Mac.

A more likely design spec would include some kind of expandability, particularly for

an 8086-compatible board, enhanced disc storage, and possibly a larger screen.

Apple watchers have ignored the idea of a colour Mac at this stage, although the inclusion of the 50000 processor is a strong possibility.

Microscope suggests a retail price "starting around" £7,000. This, however,



would make the machine the most expensive in the range, and Apple has already had its fingers burned with a computer with that destination, the Lisa.

A more realistic price would be considerably less than £5,000.

Peter Westbrook

Atari bids for wider availability

ATARI UK is currently in negotiations with a number of major high street retailers to improve the availability of its machines, from the newly announced 554X onwards

games machines to the STs, in larger stores.

"We are talking about the Atari range being available in the high street, in Dixons, WH Smith, Comet, Boots, Woolworths and so on, by the summer. We are also looking for stronger support from independent retailers," an Atari spokesman commented.

He stressed, however, that it was early days yet, and that talks would not be finalised until later this year.

He also mentioned that Atari will be unveiling its Mega ST models — 2Mb and 4Mb models — at the Atari Computer Show which begins on April 24.

DIARY DATES

FEBRUARY

13-20 February
Which Computer? Show
802, Birmingham
Details: Mainly business exhibitors
Price £5
Organiser: Caters Exhibitions,
01-201 5051

MARCH

20-22 March
The Electron & BBC Micro User Show
10051, Manchester
Details: Software, hardware and peripherals for Acorn's micro
Price £3 adult, £2 children, £1 discount for advance booking
Organiser: Caters Exhibitions,
061-454 8625

APRIL

24-26 April
The Atari Computer Show
Buxton, London W1
Details: First chance for Atari to show off exciting new ranges
Price: £3 adult, £2 children, £1 discount for advance booking
Organiser: Bantams Exhibitions,
061-454 8625

MAY

2-3 May
First Micro
Microcomputer Show
Kingsgate Exhibition Centre
Buxton, Software, hardware, peripherals for consumer users
Price: £14
Organiser: RAMCO International
Exhibitions, 01-905 2052

6-10 May
The Electron & BBC Micro User Show
New Northcote Hall, London
Details: Software, hardware and peripherals for Acorn's micro
Price: £3 adult, £2 children, £1 discount for advance booking
Organiser: Bantams Exhibitions,
061-454 8625

Prices, dates and venues of shows can vary, and you are therefore strongly advised to check with the show organisers before attending. Please Company (which) cannot accept responsibility for any alterations to show arrangements made by the organisers.



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Poolmaster is a computer simulation of pool. It is a very realistic and challenging game. You can play with a friend or against the computer. The computer will play like a professional pool player. You can choose from a variety of balls and cues. The game is very easy to learn and play. It is a great way to spend some time. The game is available for Spectrum 48K & 64K and Oracle 68000.

ORACLE 68000

For more information on this and other software titles, please contact Aerus Software, 100, The Arcade, London, W1P 0LP.



PLOT THE BALL

FOR SPECTRUM 48K & 64K

Plot the Ball is a computer simulation of a ball game. It is a very realistic and challenging game. You can play with a friend or against the computer. The computer will play like a professional ball player. You can choose from a variety of balls and cues. The game is very easy to learn and play. It is a great way to spend some time. The game is available for Spectrum 48K & 64K.

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AERUS SETTLER

FOR SPECTRUM 48K & 64K

Aerus Settler is a computer simulation of a settler game. It is a very realistic and challenging game. You can play with a friend or against the computer. The computer will play like a professional settler player. You can choose from a variety of settlers and cues. The game is very easy to learn and play. It is a great way to spend some time. The game is available for Spectrum 48K & 64K.

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New and unusual from Aberdeen

Until the end of February last year, 1989, 2 Aberdeen was a slowly growing bulletin board. Suddenly, disaster struck this small, but perfectly formed, bulletin board in the form of excessive heat. This had a very adverse effect on the young board which had to go in to hospital for some quite drastic repair work.

Now, due to absolutely no demand at all other than the aged boredom of the topic, the board has returned, with one or two small changes and a few improvements.

The most noticeable change is that all the software for downloading has been changed so that it actually works now. Also, there is a small registration fee for anyone who is going to become a serious and regular user. For normal use it costs £3.00 and if you want to try to find some useful information, the Board's message board costs an extra £2.00.

If you want to join the board a card, it is open to any computer at all, even though it is not as severely restricted but now, thanks goodness, healthy. BBC Model B, the number is still in Aberdeen 0224-832570 (7 00pm-10 00am), and the necessary settings for your computer are either 1200/175 or 300/300 baud rates with a byte setting of 8 bits, no parity and 1 stop bit (B91). The board will be starting up fully as of March 1, 1991, so please give it a call, and you might make some new, but very unusual, friends like me for example.

Sharon A Finlay
Aberdeen 1989 2 Aberdeen



"Normally, we started the sitting at £1.95"

Zeus returns... again

The Zeus assembler it will write. When installed (January 28), the game again works in 1989 mode but output goes to the MS-DOS game as expected.

The authors have perhaps noticed the rumors, post-Waters' installation of Zeus and, taking no chances, use the system variable to find the character set.

This bit, at times, is a disadvantage if you use a custom font and forget to restore Zeus before returning to the assembler. You get locked in. For instance, when you press G a single character, or whatever, goes in and you are trapped forever.

The remedy is to type the following five bytes, starting at address 00000: 77, 0, 52, 0, changing 00 DE, 004455, to 00 DE, 0000, A00.

The person editor will then always use the Spectrum font and in 486 mode you can fall in a custom font, say bold.

Always let source (v) files before running machine code.

Readers move en passant

Move 11 has now been completed in Game One of our Readers vs Colossal Chess tournament, with the Readers, playing black, voting to move the pawn on e1 to d2 en passant.

Colossal, playing white has replied by taking the same pawn, with its knight from e5.

Over to you

Now we need your suggestions for the next Readers move. Send your suggested moves to either letter-Magazine (Popular Chess), Poppo, Newbridge-on-Wye, Herts CM21 8TA (you do not need to use a stamp with this address), or Popular Chess, Unit 2, The Maltings, Sawbridgeworth, Herts CM11 0PL (which is safer). Please be slower than normal mail, so if you want to save money on stamps, post your entry promptly.

Entries must reach either address by Wednesday, February 14.

The move which gets the most votes will be entered into the game Results and Colossal's response will be published in two week's time.

Prizes

A British Museum reproduction

of the current Colossal may be altered by your machine code.

G Mainsworth
London N17

No such socket

I like to answer Mr Davies' letter in Popular January 28. First of all, none of the STs existing in Europe today are fitted for the forthcoming new chips from Atari. When Atari introduced the 32435ST, someone had in that there was an empty socket in the machine for the blizz chip.

There is no such socket in the current 10435ST, but Sam Trueman has said that there will be a socket in the future 10435. It will, however, be possible to upgrade the old STs (because the blizz will come in two versions, one in a 0P packaging for

non-Arari chips, and will go to the person suggesting the most approved moves at the end of the game. Five copies of Colossal Chess 4 (available for most popular micro) will go to the most consistent winners for the duration of the game.

Next week, we return to Game Two, where the Readers are playing white.

Game One

The moves so far:

1 Pxd-e4	Rc3-e5
2 Ng1-f3	Nd4-e6
3 Bf1-c4	Ng8-f6
4 Nf3-g5	Nd7-b6
5 Pxd4	Nd4-e6
6 Rd1-d4	Pc7-e6
7 Pxd4	Pc7-e6
8 Rd5-e2	Pc7-e6
9 Ng5-f3	Pd5-e4
10 Nd7-e5	Bb5-e4
11 Pxd4	Pd4-e3

(en passant)

12 Nd3-c3 ?



tablet), and one for copying onto the 10500 processor in the current STs.

The much awaited AMY sound chip from Atari will be available as a plug-in cartridge that will go into the hard disc port. As far as I know, both of these upgrades will be possible on all STs.

It's hard to say anything about the 32435 second processor. The new Mega STs will be able to handle it without too much trouble. I remember Sam Trueman saying that adding the 10500 to the current STs is a massive effort, which can be done, but is not recommended.

Then again, was the one megabyte megachip upgrade for the 520 STs recommended by Atari? The new Mega STs with the open bus will of course be able to handle any conceivable add-on.

Robson Pagnolly
Atari ST user group of Norway

Correction

The observant amongst you will have noticed that block 5000 of the phone book program in the Beginner's Guide to Programming is actually a replication of block 3000.

To print out your telephone numbers delete lines 5000 onwards and replace them

with the following subroutines:
5000 REM "THE NUMBER"
5010 GET LINE
5020 IF LINE="" THEN
5030 PRINT "No line"
5040 GOTO 5010
5050 IF LINE="0" THEN
5060 PRINT "No line"
5070 GOTO 5010
5080 IF LINE="1" THEN
5090 PRINT "No line"
5100 GOTO 5010
5110 IF LINE="2" THEN
5120 PRINT "No line"
5130 GOTO 5010
5140 IF LINE="3" THEN
5150 PRINT "No line"
5160 GOTO 5010
5170 IF LINE="4" THEN
5180 PRINT "No line"
5190 GOTO 5010
5200 IF LINE="5" THEN
5210 PRINT "No line"
5220 GOTO 5010
5230 IF LINE="6" THEN
5240 PRINT "No line"
5250 GOTO 5010
5260 IF LINE="7" THEN
5270 PRINT "No line"
5280 GOTO 5010
5290 IF LINE="8" THEN
5300 PRINT "No line"
5310 GOTO 5010
5320 IF LINE="9" THEN
5330 PRINT "No line"
5340 GOTO 5010
5350 IF LINE="0" THEN
5360 PRINT "No line"
5370 GOTO 5010
5380 IF LINE="1" THEN
5390 PRINT "No line"
5400 GOTO 5010
5410 IF LINE="2" THEN
5420 PRINT "No line"
5430 GOTO 5010
5440 IF LINE="3" THEN
5450 PRINT "No line"
5460 GOTO 5010
5470 IF LINE="4" THEN
5480 PRINT "No line"
5490 GOTO 5010
5500 IF LINE="5" THEN
5510 PRINT "No line"
5520 GOTO 5010
5530 IF LINE="6" THEN
5540 PRINT "No line"
5550 GOTO 5010
5560 IF LINE="7" THEN
5570 PRINT "No line"
5580 GOTO 5010
5590 IF LINE="8" THEN
5600 PRINT "No line"
5610 GOTO 5010
5620 IF LINE="9" THEN
5630 PRINT "No line"
5640 GOTO 5010
5650 IF LINE="0" THEN
5660 PRINT "No line"
5670 GOTO 5010
5680 IF LINE="1" THEN
5690 PRINT "No line"
5700 GOTO 5010
5710 IF LINE="2" THEN
5720 PRINT "No line"
5730 GOTO 5010
5740 IF LINE="3" THEN
5750 PRINT "No line"
5760 GOTO 5010
5770 IF LINE="4" THEN
5780 PRINT "No line"
5790 GOTO 5010
5800 IF LINE="5" THEN
5810 PRINT "No line"
5820 GOTO 5010
5830 IF LINE="6" THEN
5840 PRINT "No line"
5850 GOTO 5010
5860 IF LINE="7" THEN
5870 PRINT "No line"
5880 GOTO 5010
5890 IF LINE="8" THEN
5900 PRINT "No line"
5910 GOTO 5010
5920 IF LINE="9" THEN
5930 PRINT "No line"
5940 GOTO 5010
5950 IF LINE="0" THEN
5960 PRINT "No line"
5970 GOTO 5010
5980 IF LINE="1" THEN
5990 PRINT "No line"
6000 GOTO 5010

Leviathan: bigger and better

At first glance *Leviathan* looks like *Super James*, which is a pity because it's a sequel ten times better.

Taking the *Orbman*-style concept of scrolling backgrounds and firing opportunities to new and darker heights, *Leviathan* features great music and sound effects by David Whelan, along with stylish design and programming by Gregoire Saffreux's in-house team.

There are three landscapes to explore, each an amalgam

that they have to be loaded in separately from cassette, taking about a minute for each new load. The *Orbman*cape with its impressive status is particularly worth seeing.

Each stage starts with a display of the various life battles you have to defeat to subjugate the level, and each landscape features revolving water, various anti-aircraft properties, lots of battles, fuel tubes, landing strips, and some nice perspective and sprite group work.

Your fighter flies and spins



convincingly, and since you can fly and fire to either side as well as backwards and forwards in search of the rapidly-moving enemy, this game is a lot tougher than any similar shoot-'em-up.

Think you're done? Oh, that's just the start!

Popular Appeal ★★★★★
Chris Jenkins

Program *Leviathan* **Minis** C8M 64 **Price** £9.95 **Supplier** English Software, 1 North Avenue, Manchester M3 2BW (part: 025 1256)

Get writing – get Popular

Popular Computing Weekly always welcomes contributions from its readers for articles, features, and program listings.

Whether you want to write articles, see your programming masterpieces in print, pass on some words of wisdom, or simply let it steam, there's space in the magazine for you.

Ideas for feature articles, or completed articles, should be sent to Christine Eakins. All aspects of home computing are considered, but we cannot feasibly accept anything longer than 2,000 words, so brief is best. It's worth checking by phone or letter first that your article will be suitable. Payment is normally £35 per published page.

Technical editor Duncan Evans looks after the **program listings**, and articles on programming. We rely on you for our Programming section, so earn yourself a place in the Popular Hall of Fame (and £25 for each page we print) by having your program published. Even if it's not 100% of K of pure machine code, but a short snappy routine, there may well be a place for it in **Bytes and Pieces** (£10 a shot).

Articles on any aspect of programming are also welcome – with short listings included if relevant.

Got something you feel needs saying out and clear? Your opinions on any aspect of the computer industry are welcomed, so why not write in to the **Zigzag** section? No more than 600 words, please. If published, we'll pay you £15.

So maybe it's not the money you're after, but you'd just like to have some say in the magazine.

For shorter comments, general observations or queries, there is of course the **Letter page**, with the tempting offer of a year's supply of Popular binders for the Star Letter each week.

For more specific points, our team of columnists are always willing to answer questions, and keen to hear the latest information. Drop your lines to **Tony Bridge** (adventure hints always gratefully received), **Tony Keadle** (who wants as many Amiga jokes, maps, solutions, etc, as possible), **David Wallin** (communications), **Kenn Garrook** (gaming problems), **Mark Jenkins** (music queries and sample tapes) and **Martin Bryant** (computer chess connected). All letters should be addressed to Popular Computing Weekly, 12-13 Little Newport Street, London WC3H 7PP. If you mark your letters with the department you want, things get processed much more quickly.



Left: the adventurous Tony Bridge.
Right: the active Tony Keadle.



Not such a hard guy

You know it from the cover, this is one hell of a lame character! 'Who came who wins?' is said. 'Bitch makes him look like Mary Poppins.' Or should that be Mrs Poppins?

Anyhow, by giving you the cover lines, they spared you the need to buy the game, because they're by far the best thing about it. And I don't care if Bitch seems round and stupid and glibbed for saying so.

Bitch Hard Guy is a simple platform and combat game, with only two blows. You have to thump the robot in the waist, then kick them in the head. Seems they've got glass jaws as this causes them to explode. You then ascend the platform, being, kicking and dodging, until you've smashed all of the cages containing the POWs.

before you're off to the next screen.

It's all very competent, but never anything more than that. As a budget game it would be okay, but compared with *Cobra* - which also looks a lot like various approach to *Star Soldier* - it's positively bone-headed.

Victory, the going gets tough, Bitch gets going, the robot roars you. He should have gone a bit further, if he wanted to appear in a half-decent game.

Popular Appeal + + +
John Minson

Program Bitch Hard Guy
Micro Spectrum
485/128K Price £7.95
Supplier Adventure **Computers Ltd, 17 Staple Ten,**
Harlow, Essex CM18 7LX



The Fist strikes again

Let's fist again, the one still last summer... and a game, going and went off. *The Fist* is an international game and the real - based on the combat games that gained you into submission!

To lose the freedom fighter, *Fist* is to be something a bit special, because about the only martial art that hasn't ended up on the computer is unapologetic kicking. But unlike their rather dodgy Egyptian entry into the castles, *Midnight* has a real reason to be with the official *Fist* sequel.

Fighting Warner located a minimal plot in the land of the pyramids, but not enough to stop it getting swamped by quicksand. *The Fist* has added a

proper plot, and definitely all that head kicking and strong stomping has an aim, other than satisfying sadistic desires.

There are lots of screens to get lost in, which is quite nice because there's not much to distinguish one Japanese character from the next, and the same goes for their deities and weapons. But these does seem to be a lot of the Land of the Rising Sun in your SAM, from its caves to mountain passes.

Now, have you got the sword? No, your point always ends the way. Actually it's a double-ended weapon, because not only does the sword split, but you're in search of swords, which can mean weapons. These oriental

It could be a scene straight out of Apocalypse Now - your Apache punks come crashing over the jungle canopy, dodging to avoid ground-based machine gun fire.

Well to your left, a SAM missile battery is tracking you and a string of satellite-guided anti-aircraft guns is coming up fast.

You're low on fuel, but there's just enough to see the mission through. And your target, a single depot, is in your sights when... bang! You take a hit and your forward fuel tank explodes.

No explosion, but only a few minutes fuel left. What now, Ace?

This is the kind of scenario that drabets you every time you boot up *Strike* the first and greatest simulation from US warbirds, Microzone.

Strike puts you at the controls of an A-1H6 helicopter (appropriately named as the Apache), and this thing really flies.

You've got laser-seeking, radar and infra-red warnings and primers, rockets, missiles, chain guns, and the amazing computer-control weapons system *Strike* gives you it.

Start as a rookie sergeant on your first training flight in the US, then move on to the soft combat again - Vietnam where your enemies are fi-

guriously armed as your Apache gives you the edge.

After that it gets tougher as the late General America, the Middle East, and finally the hypothetical confrontation against the Russians in Western Europe, the toughest opponents of all.

When each combat scenario you have the choice of three levels of opponents (regular missions and the hardest, 'volunteer' jobs are risky, and 'volunteer' scenarios are real tactical).

Successful missions in your leading teams of difficulty start you *Strike* missions, campaign missions, and finally, with your own mission to establish Central and win the Congressional Medal of Honor.

Missions are assigned randomly and if it looks too tough you can chicken out by going sick. But you'll get a reprimand, and promotions will be harder thereafter.

Before the mission you can check an on-screen map, and read an intelligence briefing on the kind of opponents you'll encounter. You can also modify the fueling and armaments of your Apache. The same data available in the training past. First then on, you're on your own until you crash down again.

The actual flight simulation is superb. Controls are very responsive, and the simulated

systems can be used in various mysterious ways, but it's up to you to find out how. No Target Identification Bureau in this game, but you could find some cryptic clues by peering at a phone, where you'll also regain strength.

It's the plot sounds like a might be keeping you from the real business in hand - a, knocking the stuffing out of some nasty guys - don't worry. They crop up all over the place, though not so repetitively as in *Fighting Thunder*, and each of the five human types has different strategies. There can also be big black enemy jets, but don't try dodging them - missed all ten parades, please. And lightning bolts!

The combat works fairly well, though the scrolling has no focus, and this can cause

problems if a large amount of the screen is taken up by a background object, obscuring the action. There's also a slight problem when you leave your appointed to the edge of the screen. He can reach into the missing and sometimes seems to finish, leaving you break into one oblivion.

Fist if it's perfect, but it puts a ton of the kick back into an old game. Go to it, little grasshopper!

Popular Appeal + + + +
John Minson

Program The Fist
Micro Spectrum
485/128K Price £8.95 Supplier **Midnight** **Computers, 601 High Street, Hampton Wick, Kingston-Upon-Thames, Surrey KT1 4QR**

Blown away!

view out of the cockpit is detailed, colourful and smooth.

When you land you're tied on your mission. Taking too long causes agents to die, as does shooting friendly troops. Be well and you'll win the first medal and maybe a promotion.

Gunship's presentation is flawless. Weapons systems are realistic (the shipper backs while you fire), there are day and night missions, and factors to take into account, and there are graphic scores for important events – medal presentations or crashes.

The accompanying manual is over 80 pages long and

includes a full guide to game controls, flight controls, the theory and practice of helicopter flying, and discussions of weapons and tactics.

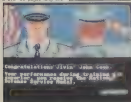
When it comes to combat flight simulators, Gunship blows everything else out of the sky. Yes, it's expensive, but it's worth every penny.

Popular Appeal ★★★★★
Peter Warlock

Program Gunship Missions
Commodore 64/128
Price £19.95 (pbw), £14.95 (successful)
Supplier Microprose Software, 2 Market Place, Tebbury, Glos GL8 8DA



Above: main playing screen for Gunship. Below right: the prominent scores. Below left: the hero returns to base.



Apache performance

It's unfortunate for the C64 version of Tomahawk that it arrived at the same time as Gunsip. A few weeks ago it would have rated it highly. Alas, no longer.

Despite the name, Tomahawk is another Apache simulator and although pretty good in its own right, it suffers a comparison with Gunsip in just about every department.

For example, the animation is noticeably pricy, the graphics are nowhere near as detailed or as colourful, and it lacks all of Gunsip's "blowing up" – no mission briefings, no chance to tailor your weapon load, no promotions

or medal ceremonies.

Tomahawk is more of a game in terms of control – three hits and you're dead in Gunsip; five and there's no knock out various weapons, or one hit from a missile might take out your return immediately.

Unfortunately, Tomahawk doesn't actually play any faster. It is easier to fly and to get into combat in the early stages, but you are limited to three scenarios: capture four map sectors, capture all map sectors, or support ground troops – although there are four levels of difficulty.

Overall, Tomahawk lacks the overwhelming sense of

realism that makes Gunsip so outstanding. It is fun and cheaper than the Microprose offering, but it also looks less good cheaper.

Popular Appeal ★★★★★
Peter Warlock

Program Tomahawk Missions
Commodore 64/128
Price £14.95 (pbw), £9.95 (successful)
Supplier Digital Integration, Winchester Trade Centre, Winchester Road, Campton, Surrey GU24 3AL



Digital Integration's Tomahawk.



Follow the stainless steel road

Tony Bridge reviews two new adventure games: Satan's Servants on the Spectrum, and the latest from Asclepius on the Amstrad CPC

Satan's Servants. That really makes you sit up and take notice, doesn't it — it's short and sweet but to the point, and grabs you by the adventure-playing pants. And it's also the name of a new two-part adventure from a new author, G Marshall. Surprisingly for a new story, this one isn't (obviously) Quaff's, which says a lot for the author's determination.

The aim of the game, which is available for the Spectrum, is simple — all you have to do is to defeat the evil dark and his pets (the servants, naturally) and then remove your load of magic before he uses it to turn the world into darkness.

These servants come in several sorts of 'yeoldy', including giant orcs, gargoyle-corned rattle-grinders, rombos, Ptero-Jacks, laughing hawks (Dread Hums), I presumed and other fiendish-looking things. And, being a role-playing game, you'll get your chance to do battle with each and every one of them.

The mechanics of the game are simple really, explore the landscape, pick up objects and use them at your leisure against the creatures, the dummies, and finally against Satan himself. The pictures, which may be turned off, are nothing special (imagery on Amstrad who takes the level 2 interface and you've got the idea), but they are quickly drawn and are rather nice.

The directed multiple-word input can be used, which means that you can use things like Up the rope and then go North, which is unusual for a home-grown adventure — but you must be careful with your typing finger, the usual first four letters of a word will be recognised (and sometimes three or even none), but type a little later incorrectly, and the program refuses to recognise the input.

Help isn't recognised or given, but examining most objects will give a name or two (weights claim to be 100 lbs, so the player shouldn't be startled for too long). The biggest problem is actually surviving long enough to use the object, many of the tight situations are unrelaxed, and you must make the exact number of moves in exactly the right sequence in order to escape the immediate consequences of your blundering.

The pricing of this one is interesting, although bearing in mind that the adventure is a two-parter and that there is a lot

to do, the original price of £7.50 was still much too high. The author tells me that the price was arrived at on the advice of local retailers.

However, I'm glad to see that G Marshall has thought twice about all this and set a new price of £6.50 which includes Postage and Packaging. This will be further reduced to just £3.50 on the production of this Corner. For two adventures, it's a steal!

To be perfectly frank Satan's Servants is not the most original of adventures, the puzzles are given away too cheaply by the program itself, the graphics are hardly stunning, and the interface has been stolen a million times before. But for all that, I have a great deal of admiration for one adventure-writing system.

There is quite a good atmosphere created by the text, although the location descriptions are generally rather short, and I feel that a bit more imagination applied to the basic storyline might pay over dividends. In fact, I'm told that a second story is already in production — it's hoped that this will be even better.

Available from G Marshall, at PO Box 18, Redcar, Cleveland TS10 2YS.

From a non-Quaff adventure is a Quaff adventure on the Amstrad CPC from Asclepius Software. Of course, you'll know who Asclepius is, but I had to remind me of the monomaniac to this one, whereas I am told that old Asclepius is the Greek god of Healing. Lee Ward, who is Asclepius Software, tells me that he chose the name because it gives an atmosphere of being really laid back and peaceful! (Maybe that software would be a good choice next time.)

The story really starts with the accidental release of a deadly virus on a colony planet, some 500 years ago. The resulting 10 million infected people were rounded up, shoved in a spaceship and shipped off in the direction of the planet Sargasso. Unfortunately, things go wrong (aren't they always?) and eventually blow on the way — therefore, the robots assigned the task of guarding the planet get into about their station and decide to conquer the universe in the spare cabin spaceship. It's your task to stop them.

The game itself is quite, thanks to The Quaff and there is a fair amount of atmosphere as you explore the planet and meet the native population. There are lots of objects to pick up, though their uses are not immediately apparent and you are given the obvious clues. There are quite a number of interesting images, including 'stainless steel roads' (ready to rock which suddenly bend up towards the sky, and a new pattern of measurement which includes 'tendrils' and 'spaciously').

The puzzles are fairly straight forward, or at least straight-ahead (save this one and then take the next one and rather than confusion — this shows a lack of imagination — but the whole thing is fairly humorous and for the asking price of £1.25 is going to help you while away several hours (and I don't want to hear from you if you stay up all night and solve it) in odd sitting. There's certainly more to Asclepius than that! Asclepius Software is at 84 Stainesville Road, Cramlington, Surrey ST6 1BX.

Adventure Helpline

Three Weeks in Paradise on Amstrad CPC4128. How do you sharpen the blunt axe, if at all? How do you use the bottle and corkerow? T. Smith, 66 Swanton's Road, 148 Park Square, Sheffield, S1 2PB.

Continue on Amstrad. Which is the trumpet and how do I get it to be broken, 143 Valley Crescent, Clonard Heath, Poole, Dorset BH17 7TE.

Mindshatter on Atari 800XL. How do you hold the car at the airport? I have the car CD, Games Headlines, 55 Buckingham Road, Oxford OX4 1JQ.

Sphinx on Electron. I can't find the ball at the medal ring — have I tipped a lot of hair up to reveal Stephen Miller, 139 Langley Drive, Glastonbury, Somerset TA1 2EA.

21st CENTURY WARRIOR: Apache



MICRO PROSE
SIMULATION • SOFTWARE

Apache is a simulation of the Apache helicopter, featuring a detailed cockpit and a variety of weapons and targets.

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Apache is a simulation of the Apache helicopter, featuring a detailed cockpit and a variety of weapons and targets.



Above: Fig. 1 shows the user reader menu. Below: Fig. 2 contains the dictionary



When looking at Locomotion for the first time, it was obvious that it lacked those major features - a mail merge facility, a word count and a spelling checker.

The first hint came with Locomotion - and now the last two gaps have been filled in with Locomotion.

For those looking for a dose of glory, Locomotion seems to have almost slipped over - although Amstrad Locomotion targeted the audience with its contracting POW! owners by mail and all-

luring the package as well as it was finished.

Now it's generally available, and here at *Popular* it's been greeted with open arms by those individuals who always talked in the back of class during English Language lessons.

In operation, it is as simple as you could hope for. You boot up using the new Locomotion disc, which includes Locomotion version 1.4, containing an extra list of words for the Locomotion features.

It also has on a disk a specially selected dictionary,

Searching for Mr (word) Perfect

made up of 32,000 words. This is automatically copied to the memory drive.

You enter words manually as usual, but on pressing F7, a new window opens up which gives you the option to check spelling (see Fig. 1).

The program will now go through the document, and stop if a word is doesn't recognise - suggesting a replacement word, or giving the user a number of other options (Fig. 2), including the opportunity to consult the dictionary itself if you are

together with the option of updating the User Dictionary if you have added any new words to that list.

Locomotion is an excellent program - although it does have a couple of drawbacks. The major one being speed. Although slow and a bit unreliable for a thousand word document it isn't fast, but that's using the large database on the memory drive. In option not open to (unhappy) old 6250 owners who, in order to use it, must copy the document to memory and run

"In operation, it's as simple as you could hope for. You boot up the Locomotion disc, which includes Locomotion version 1.4"

hopelessly lost.

Now the word is displayed at the head of a drop down menu, with a tabulation from the dictionary displayed in the body of the window (Fig. 3). One particularly useful feature is the ability to simply consult User Dictionaries if an incorrect word, then are not included in the 32,000 word list for the 32,000 words found on page 3 of the book, but you find yourself using for your own particular needs.

Finally, at the end of checking a word count will be given, the dictionary from the floppy

- Alan.

But for all that, it is fully integrated with the word processor you are likely to be using and is working with Locomotion. And very easy to use.

If you are serious in using your POW! for writing, the program will open itself up, displaying spelling mistakes and notes that you do when you're looking for the word. So unless you're Mr Perfect - it's invaluable.

John Cook (MR Imperfect)



Fig. 3: the dictionary itself



Double-checking at the end

The beginning of the end

Tony Kandle passes along Equinox tips from the inimitable Hackers Unlimited

For the first couple of weeks we are going to be concentrating on another very welcome letter from our regular and invaluable correspondents, Hackers Unlimited - Julian ET Snyder-Smith and Cappa Johnston.

It's a slight change of focus from that usual consideration in that the bulk of the letter consists of tips rather than games, but the games that are there are essential.

Here is our complete guide to completing Equinox on the Amstrad. The guide is intended to be used with our quiz that not only gives you there points but also prints a room number on the top right hand corner of the screen. This is an

adaptation of a listing we have previously sent in to you. It will give the player infinite thrust and infinite laser charge as well as the room number.

For those that aren't familiar with hacker's tricks, finding infinite lives, games can be fairly easy if you look for the familiar routines that most programmers used to room lives, etc. Trying to find obscure parts of the program, such as that which counts the room numbers, can be much more of a challenge and a slog.

The games, with maps and tips for the remaining obscure levels, will be run next week. In the meantime, save this page - it will come in handy!



Anyone who can come up with a better collection of games for the Spectrum version will have nothing to worry about.

The guide to the game will have the player step by step through each of the eight levels of Equinox with the exception of the final level which you have already printed the solution for.

Please note that the player must follow the guide strictly - if any instruction is ignored it may mean that the particular level will not be completed in the required time. Owners of other computers may be able to use the map and clues that are given here - but we don't know if the game play will be the same. I think it should be.

Level Three

32--33 34

1 1 1

1 1 1

35--36 37

1 1 1

1 1 1

38--39--40

1 1 1

41--42--43

1 1 1

44--45--46

1 1 1

47

48

49

1: Get key in room 35 and unlock door in 45.

2: Get fuse in 46 and turn off beam in 32.

3: Get credit in 32 and pay teleporter in 47.

4: Teleport from 47 to 34.

5: Get radiation canister from 34 and deposit in 44 (do not teleport!).

6: Teleport from 47 and get the level 4 pass from room 37.

7: Go to room 43.

8: Proceed to level 4.

Level Four

48--49 50 51--52

1 1 1

53--54--55

1 1 1

56--57--58--59--60

1 1 1

61--62--63

1 1 1

1: Get the credit in 43 and pay the teleporter in 54.

2: Get the credit in 61 and pay the teleporter in 54.

3: Get fuse in 51 - teleport from 54 to 48.

4: Get the drill in 48. Leave the fuse.

5: Teleport from 48 to 54.

6: Drill the obstruction in 55 and get the dynamite.

7: Teleport from 54 to 48.

8: Blast the blockage in 55 and get

the credit.

9: Pay the teleporter in 57 and teleport to 50.

10: Get the radiation canister from 55 and deposit in 43.

11: Get the fuse from 48 and teleport from 57 to 50.

12: Turn off the beam in 51 with the fuse.

13: Get the level 5 pass from 50.

14: Teleport from 48 to 54.

15: Go to 63.

16: Proceed to level 5.

Charts

Top Twenty

- 1 (1) Countrol
- 2 (2) 100
- 3 (3) Paperboy
- 4 (5) Otto and Lita
- 5 (8) Ring
- 6 (14) Soldier's Cup: up His
- 7 (8) Footballer of the Year
- 8 (12) Mark Vantage
- 9 (8) Computer Wars Vol 3
- 10 (18) Space Harrier
- 11 (52) Trivial Pursuit
- 12 (55) No Puck
- 13 (1) Rat 2
- 14 (14) Pro Breaker
- 15 (11) Five Star Games
- 16 (53) Agony 2
- 17 (1) Silver King 2
- 18 (17) They Sold a Million (3)
- 19 (14) Jailbreak
- 20 (15) Scooby Doo

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- Elite
- Firebird
- Masterton
- Imagin
- Granite Graphics
- Cole Masters
- Beas Jolly
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Draw your own conclusions with Eidersoft

For many professional artists and CAD users, using a mouse on a drawing board with their ST is simply not good enough. Something like a graphics tablet is required for greater accuracy.

This can be used in either of two ways, first by simply replacing the mouse with a stylus or more usefully by enabling drawings placed on the tablet to be accurately traced and reproduced on screen.

The Pro Draw graphics tablet from Eidersoft has a size by six inch drawing area and comes supplied with left-hand wedge, stylus, power supply and manual.

Connecting all the equipment up is perfectly straightforward, with the mains transformer supplying power via a lead going into an interface connected to the serial port on the ST's port. The very same interface has a lead coming out which connects up to the graphics tablet. On the underside of the tablet is a socket into which the stylus or puck can be plugged and also a detachable ergonomic rest.

Unlike most graphics tablets in the home computing market, Pro Draw is not a pressure sensitive pad, but of the more expensive and professional device-magnet type. Instead, the stylus can be as much as two inches away from the tablet's surface before contact is lost.

The design of the tablet is such that it can cope with screen resolutions up to 1000 pixels square so if the ST undergoes a graphics upgrade then Pro Draw will be all the greater use. Also, should you make a new ST in the future then you should be able to use the tablet with other computers if they have the required software to drive it.



Resolution: up to 1000 pixels square

Duncan Evans trades in his mouse for a Pro Draw Graphics Tablet

Speaking of software, the program supplied with Pro Draw is not a graphics package in itself, but a wedge, in the form of an installable disk accessory or a directly executable program, which can be used to trace an official Gerni mouse

in fact, after using Pro Draw with a copy of the specially configured Art Director (available from Eidersoft) and comparing the results obtained with those from uncalibrated copies of MacDraw, PageMaker, Art Director and Easy Draw I have to say that you'd be better off with the former.

Eidersoft is, in fact, having discussions with a number of companies to produce specifically compatible versions of its programs, including one from Vision Germany called ST AD, which promises to be well worth looking at.

In order to get the best from the stylus your drawing skills have to be up to professional level, otherwise you're just wasting your time. However, there is an optional extra called the puck, a sort of ribbon-like device with cross hairs in the centre of a magnetic coil, which is much easier for the less talented, including myself, to get to grips with. It will cost you an extra £55 (if, though).

The probable market for Pro Draw is of professional and educational bodies, or maybe the enthusiasts and self-starter.

I say self-starter, because the package retails at £289 including Vax and Art Director and the puck and an optional flow in the pocket. However, comparable products on the Macintosh and G400 weigh in at around £450.

If you're serious about drawing or art then this tablet should be one that isn't hard to justify.



Trace over sketches on the tablet

calls to the stylus instead.

So, you'll need a graphics package as well and the choice is between going for one that Eidersoft has arranged to be made specifically compatible or trying to luck, and hoping that the program you've bought uses official Gerni calls.

If you're thinking about using Pro Draw with MacDraw, which is supplied free with the ST, then forget it. While using the stylus is an acceptable replacement for the mouse, MacDraw will not trace the outlines of drawings on your tablet with any accuracy or in scale.



More accurate than a mouse

Product: Pro Draw Graphics Tablet **Price:** About £289 ex Vax, Amiga £215, ex the Supplier **Eidersoft Software, The Office, Hall Farm, W. Oxendon, Loughborough, Leicestershire, LE12 5JH**

PROGRAMMERS required



Can you match the software shown above? If so, we would like to hear from you. Z80,6502 and 68000 programmers required for in-house and freelance projects.

For further details please contact Mr. Rob Cobain or Mr. Mike Meek on Bracknell (0344) 427317.

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Telephone No: (0344) 427317

Telex No: 848940 MIKGEN G

Rockfall

Craig Davenport

The premise of Rockfall is simple. All you have to do is collect the 50 diamonds on each screen without being squashed by the rocks. Unfortunately it's not that easy as the route to success on some of the screens is tortuous. To say the least, 500, the excellent multi-directional graphics should keep you coming back for more.

First, type in listing one, and when asked how many 8. As this routine contains a short machine code routine for the game, problems like diagonally falling boulders will probably be caused by errors in listing one.

More of the listing two follows in the coming weeks.

```

50 PRINT "PRINT* PLEASE WAIT!!! "
510 RD=12288/1000
515 READ A:IFA=-1THEN4000
520 POKERD=A:R=X+1:GOTO510
530 RD=49152/1000
535 READ IFA:--1THEN5000
540 POKERD=A:R=X+1:GOTO510
1000 DATA88,102,110,116,96,96,60,0,24,60,102,102,102,102,102,0
1001 DATA124,102,102,124,102,102,124,0,60,102,96,96,96,102,60,0
1002 DATA120,100,102,102,102,100,120,0,120,96,120,96,96,120,0
1003 DATA126,96,96,120,96,96,96,0,60,102,96,110,102,102,60,0
1004 DATA102,102,102,126,102,102,102,0,60,24,24,24,24,24,60,0
1005 DATA60,12,12,12,12,100,50,0,102,100,120,112,120,100,102,0
1006 DATA96,96,96,96,96,120,0,92,119,127,107,99,99,99,0
1007 DATA102,110,126,126,110,102,102,0,60,102,102,102,102,102,60,0
1008 DATA124,102,102,124,96,96,96,0,60,102,102,102,102,60,14,0
1009 DATA124,102,102,124,120,108,100,0,40,102,96,60,0,102,60,0
1010 DATA126,24,24,24,24,24,24,0,102,102,102,102,102,60,0
1011 DATA102,102,102,102,102,60,24,0,99,99,99,107,119,99,0
1012 DATA102,102,60,24,60,102,102,0,102,102,102,60,24,24,0
1013 DATA126,6,12,24,40,96,126,0,60,40,40,40,40,40,60,0
1014 DATA12,18,40,124,40,96,252,0,60,12,12,12,12,12,60,0
1015 DATA0,24,60,126,24,24,24,0,16,40,127,40,16,0
1016 DATA0,0,0,0,0,0,0,0,24,24,24,24,0,0,24,0
1017 DATA102,102,102,0,0,0,0,0,102,102,102,102,102,102,102,0
1018 DATA24,62,96,60,6,124,24,0,96,102,12,24,40,102,70,0
1019 DATA60,102,60,96,100,102,60,0,12,24,0,0,0,0,0
1020 DATA2,24,40,40,40,24,12,0,40,24,12,12,12,24,40,0
1021 DATA0,102,60,255,60,102,0,0,0,24,24,126,24,24,0,0
1022 DATA0,0,0,0,0,24,24,0,0,3,5,12,24,40,96,0
1023 DATA0,102,110,110,102,102,60,0,24,24,96,24,24,126,0
1024 DATA0,102,6,12,40,96,126,0,60,102,6,20,0,102,60,0
1025 DATA6,14,30,102,127,6,6,0,126,96,124,6,6,102,60,0
1026 DATA0,102,96,124,102,102,60,0,126,102,12,24,24,24,24,0
1027 DATA0,102,102,60,102,102,60,0,60,102,102,62,6,102,60,0
1028 DATA0,0,24,0,0,24,0,0,0,0,24,0,0,24,0,0
1029 DATA14,24,40,96,40,24,24,0,0,0,126,0,126,0,0,0
1030 DATA0,42,47,175,100,100,102,102,102,173,45,45,43,11,10,2
1031 DATA120,100,232,240,20,126,126,94,94,126,126,122,240,232,224,100
1032 DATA3,3,15,13,61,53,246,214,214,246,53,61,13,15,13,3
1033 DATA102,102,240,112,124,92,159,151,151,152,92,124,112,240,102,102
1034 DATA234,254,234,170,232,239,239,170,63,243,255,60,255,260,252
1035 DATA235,235,195,195,195,195,195,195,195,195,195,195,195,235,235
1036 DATA125,195,195,195,195,195,195,36,60,60,24,126,24,94,102
1037 DATA12,31,54,63,71,71,53,63,63,3,3,7,14,12,12,20
1038 DATA0,200,204,252,240,240,102,252,252,102,192,224,112,40,40,56
1039 DATA252,192,192,224,112,53,60,24,0,0,0,0,0,0,0,1
1040 DATA190,0,102,255,100,213,0,201,62,240,13,201,63,240,9,201

```



```

2001 DATA 64,240,5,201,65,200,25,204,141,0,200,100,255,6,201,32
2002 DATA 200,14,165,52,157,217,6,173,0,200,157,255,6,204,204,204
2003 DATA 200,204,255,200,207,200,192,4,240,15,206,6,192,200,27,192
2004 DATA 205,38,192,200,44,192,76,2,192,140,6,141,6,192,141,29
2005 DATA 192,141,38,192,141,44,192,56,255,255,0,0,255,255,0,0
2006 DATA 255,255,0,0,255,2,0,0,255,255,0,0,255,255,0,0
2009 POKE 631,70:POKE632,62:POKE633,87:POKE634,13:POKE635,76:POKE636,111
6010 POKE637,13:POKE638,92:POKE639,117:POKE640,13:POKE641,10:END
    
```

Programming: QL

Microdrive Label

J V Marks

With this program it is possible to print up to a dozen labels each with 16 characters using an Epson compatible printer.

The number of names depends on the line spacing which is controlled by the second Ctrl in line 220-2 in this case. If the '2' is changed to '3' the number of lines is reduced.

The use of the printing is also dependent on the size of print before using this program. Good results are obtained from power up, but better ones are obtained starting from the tape.

```

100 GOTO 10,5:PRINT *** QSL LABEL ***
110 REM-- LABEL PRINTING PROGRAM FOR THE QSL/QLS S.L. BY JOHN MARKS
120 REM 1,5-PRINTING LABEL WIDTH FOR MICRODRIVE
130 REM 2,1-PRINTING MICRODRIVE LABELS ON THIS LABEL 1-10:PRINT 0
140 IF 1=1 THEN GOTO 10:130
150 REM 3,PRINTING MICRODRIVE LABEL WIDTH
160 REM-- LABELS FOR MICRODRIVE OR OTHER MICRODRIVES
170 REM 10-10:1
180 PRINT 0
190 REM-- 0
200 PRINT 0,0
210 PRINT 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
220 PRINT 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
230 PRINT 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
240 REM 1
250 REM 0,0
260 PRINT 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
270 REM 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
280 PRINT 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
290 IF 0=1 THEN GOTO 10:130
300 IF 0=1 THEN GOTO 10:130
    
```

Programming: BBC

Compacter

Dean Lester

This program will convert disk programs and speed execution up by removing all Run keys completely. Empty lines begin with only a colon, unnecessary spaces and all variables used with the New keyword, at the end of a For-Next loop.

The assembler program should be typed in and run. If the checksum is correct then the program saves the machine code in a file called 'Compac'.

On your own send a block cassette and £2.00 to D. Lester, 36 Priestman Place, Campbell Road, London E2 2BY.

```

***** COMPACTOR *****
NAME =          for BBC      *
DATE =          and Electron  *
NAME =          by Dean Lester *
DATE =          *
*****
    
```

```

%:
%CLS
%FORNEXT
%FORNEXT
%FORNEXT
%FORNEXT
%FORNEXT
%FORNEXT
%FORNEXT
    
```

```

%:
%FORNEXT
%FORNEXT
%FORNEXT
%FORNEXT
%FORNEXT
%FORNEXT
%FORNEXT
    
```

[illegible][illegible][illegible]

Programming: Spectrum

Scroll Routine

A. J. W. G. M.

This is a scroll routine for the Spectrum with a difference. It will allow the user to scroll upwards from any line by any amount of lines not exceeding the bottom of the screen of course. Most of the usual commands such as

To save the machine each owner gave "Sweet" a code. Between 1972 and the year of

on its own enter last ¹⁰⁰ Code (for address) $\text{Pois} \text{ start address} + 2$, and the $\text{Pois} \text{ start address} + 3$, number of lines

Don't forget to use clear short address - 17 letters plus short line code, though. Also, do not include any numbers (except Page 123 for volume).

```

10 REM SMALL ROUTINE TO
20 CALCULATE THE
30 CUMULATIVE PROBABILITY
40 FOR I=1 UNTIL 10000
50 READ A: FOR J=1 UNTIL P
60 LET A=CUMUL+LET B=0: LET
70 B=1: LET P
80 IF B>CUMUL THEN PRINT B:GOTO
90 GOTO 10: DATA .0001: .0001:
100 CONTINUE
110 PRINT "SMALL" LINE 10
120 PRINT #1: A, B: GOTO 40: FOR I=1
130 UNTIL 10000: GOTO 40

```

[illegible]

```

P01 000 *****
P01
000 0000 24, 2, 4, 0, 1, 041, 221, 225, 226, 126,
1, 254, 1, 44, 12, 79, 221, 118, 2, 179, 204
230 0000 21, 240, 221, 035, 2, 242, 121, 242, 4,
2, 79, 118, 2, 221, 118, 1, 268, 226, 1
230 0000 229, 023, 035, 240, 240, 225, 4, 0,
P01, 1, 52, 0, 225, 227, 036, 1, 254, 0, 0
230 0000 229, 2, 0, 0, 0, 124, 041, 254, 0, 40,
03, 04, 254, 0, 0, 24, 207, 0, 0, 34, 0, 0
240 0000 221, 224, 2, 262, 036, 0, 4, 52, 229,
P01, 4, 4, 0, 0, 0, 0, 4, 0, 225, 041, 225
240 0000 21, 21, 241, 241, 221, 0, 0, 2, 200

```

Programming: Amstrad CPC

Info

Richard Gendron

The RSR takes the file header, extracts the useful information and displays them on the screen. There are, in order, user remarks full name, the name, start address, length of

The numbers will all be displayed in hexadecimal.

[illegible][illegible][illegible]

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Spectrum, Amstel, Oil, Commodore and, to send those things in, what we need is a working copy of the program on tape or disc, plus an accompanying article or documentation that you would anticipate going with the piece, normally not more than 30000 bytes.

Alternatively, send in your short paragraph to the Style and Photo page — where you'll be noticed!

10. **10/10/10**, now it's going they probably want off of the ground, but they didn't even make it.

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Memory Fill

Adam Wright

This routine for the Commodore 64 allows you to fill a specified area of memory with a specified byte. This could be useful for filling colour memory or removing data.

The syntax is `SYN 49152, start address, number of bytes to be filled, byte to be filled with`.

PROGRAM LIST

```
00000 00000000000000000000000000000000
00001 00000000000000000000000000000000
00002 00000000000000000000000000000000
00003 00000000000000000000000000000000
00004 00000000000000000000000000000000
00005 00000000000000000000000000000000
00006 00000000000000000000000000000000
00007 00000000000000000000000000000000
00008 00000000000000000000000000000000
```

```
00009 00000000000000000000000000000000
00010 00000000000000000000000000000000
00011 00000000000000000000000000000000
00012 00000000000000000000000000000000
00013 00000000000000000000000000000000
00014 00000000000000000000000000000000
00015 00000000000000000000000000000000
00016 00000000000000000000000000000000
00017 00000000000000000000000000000000
00018 00000000000000000000000000000000
```

Spectacular Clear

Simon T Goodwin

This remarkable machine code routine for the Amstrad CPC machines provides two novel ways of clearing the screen. Call address produces a shimmer effect. Call address+16 produces a fade out effect.

```
10 00000000000000000000000000000000
20 00000000000000000000000000000000
30 00000000000000000000000000000000
40 00000000000000000000000000000000
50 00000000000000000000000000000000
60 00000000000000000000000000000000
70 00000000000000000000000000000000
80 00000000000000000000000000000000
90 00000000000000000000000000000000
100 00000000000000000000000000000000
110 00000000000000000000000000000000
120 00000000000000000000000000000000
130 00000000000000000000000000000000
140 00000000000000000000000000000000
150 00000000000000000000000000000000
```

Restore Extend

Chris Horton

This program for the C64 extends the limited Restore command so that the user can specify which line the data pointer is to be pointed to.

The syntax is `SYN 49152, line no.`
The routine occupies memory from 49152 to 49204.

```
00000 00000000000000000000000000000000
00001 00000000000000000000000000000000
00002 00000000000000000000000000000000
00003 00000000000000000000000000000000
00004 00000000000000000000000000000000
00005 00000000000000000000000000000000
00006 00000000000000000000000000000000
00007 00000000000000000000000000000000
00008 00000000000000000000000000000000
00009 00000000000000000000000000000000
00010 00000000000000000000000000000000
00011 00000000000000000000000000000000
00012 00000000000000000000000000000000
00013 00000000000000000000000000000000
00014 00000000000000000000000000000000
00015 00000000000000000000000000000000
00016 00000000000000000000000000000000
00017 00000000000000000000000000000000
00018 00000000000000000000000000000000
00019 00000000000000000000000000000000
00020 00000000000000000000000000000000
```

```
00021 00000000000000000000000000000000
00022 00000000000000000000000000000000
00023 00000000000000000000000000000000
00024 00000000000000000000000000000000
00025 00000000000000000000000000000000
00026 00000000000000000000000000000000
00027 00000000000000000000000000000000
00028 00000000000000000000000000000000
00029 00000000000000000000000000000000
00030 00000000000000000000000000000000
00031 00000000000000000000000000000000
00032 00000000000000000000000000000000
00033 00000000000000000000000000000000
00034 00000000000000000000000000000000
00035 00000000000000000000000000000000
00036 00000000000000000000000000000000
00037 00000000000000000000000000000000
00038 00000000000000000000000000000000
00039 00000000000000000000000000000000
00040 00000000000000000000000000000000
```

Programming Spotlight

This is a new feature for the programming pages of *Popular Computing Monthly* where programs which would normally have to be reprinted simply because of their length are deleted, with a screen shot or dump included, and offered to the author for sale to you, the reader. Programs featured in this special section the copyright of *Popular* and also we pay a nominal sum of £10.

R M Wilkinson

This handy Spectrum utility enables the user to step through a machine code program one step at a time, examining the results in the various registers and memory locations, changing them if necessary. All 102 unimplemented instructions are handled and single registers are represented in binary.

For a copy of *Singlestep* and full working instructions send £7.50 to R M Wilkinson, Programming Services, Popular Computing Weekly, 12-13 Little Newport Street, London WC2N 6PP.



Singlestep

Programming: Peek & Poke



with Kevin Connolly

How to drive a disc

Abstract *Abstracts of the papers presented at the 1997 Annual Meeting of the American Psychological Association, Washington, DC, August 1-5, 1997.*

Q I have always wanted to know, and you seem to be the best person to ask: how does a wine drinker search?

A flat drive rotates in a whirlwind fury to shatter tape. The major difference is that the disc is flat, so the data is stored on concentric tracks, which makes it easier to get at. The disc is coated in magnetic material, which allows the data to be stored on north and south poles and lines corresponding to zeros and ones. Each track is split up into sectors magnetically - usually can per side with 40 or 50 tracks per side of the disc, depending upon the density (angle and diameter). The density of the drive depends on the number of tapes the head/sector head can move across the disc. The more tracks there are, the finer the control needs to be and hence the more expensive the drive is.

The disk is read or written by means of a head which contains an electro-magnet to magnetize systems for writing and senses the polarity for reading. The head is mounted on an arm that moves across the surface to pick out the individual tracks. This arm is moved by a stepper motor which receives the data in precise increments.

On most systems, track zero is found by moving the head as far out as it will go. The position is designated track zero. The systems are then defined by means of a scale near the centre of the disc. When this scale is reached

up by means of a light detector shining through a sector disk can be defined. On Commodore drives this helps to avoid trouble for the possibility of using both sides of a disc simply by rotating another while passing north and south of the disc head.

When a format command is issued to the drive, track and sector zero are found and information relating to the drive and end of each sector is written to each track. Once this is done, a directory is set up which contains the names of the disc and the positions of the first sectors, all of these are located zero.

Once formatted, the disc operating system reads and writes the disc according to the directory which, for each file, contains the name and disk/cylinder locations of any information relating to that particular file.

Circle racing is a free event with 35, 40 and 60 classes, each track having 10 sections. Normally, 40 track class hold about 2000 types of data in each track will have 8K and each sector 64K bytes. Sometimes you may see dog-draws used with an undrained capacity which is greater than the formatted capacity. This is because some of the space on the disk is taken up with the format information and other space.

Black drivers are statistically 40 percent more likely to be pulled over by police than white drivers, and are 16 percent more likely to be arrested than white drivers, according to a study by the U.S. Department of Justice.

Cheaper communications

E. J. Connel and Anthony R. Perry
1976-80, 1982-83

Q I have two BBC microcomputers and I wish to link them allowing communication from one to the other via a pair of telephone wires. Could you please advise me if it is possible to use the RS423a for this purpose?

Is there any existing software or article about this type of network? It is preferable to the very expensive Eucal system, since it should be very much cheaper.

A It is quite easy to do what you propose, although you will need a note of at least five cents to cover the fee. To start with, call me: 800-454-4331. On-line: Available from Maple, Executive Supplies and contact the following link together.

Index	Index 1	Index 2
1	Index 1	Index 2
2	Index 1	Index 2
3	Index 1	Index 2
4	Index 1	Index 2
5	Index 1	Index 2

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Once this is set up the following programs running on both machines should show you the results.

[illegible]

Lines 32 sets up the system to read the keyboard and enable the PS/2 mouse. Lines 25-33 set up the channel and access speeds to 300 kbps. If you want to go faster, then refer to page 424 of the User Guide.

Line 40 sets up the parameters for a VZ or DSSM (P474) call to insert a character into the P4673 output buffer. Line 60 checks the overflow buffer (P4694)-if this is greater than 0, there is a character waiting to be processed. This is then transferred to the P4423 output if there is room in the output buffer (L4484). If no, the DSSM VZ call (see page 33 of the Classic P4423) will transfer (line 70).

The 702.7 is the 101st place for Gettysburg in total deaths from the 1847-50 war. Line 70 does exactly

the # there is a character waiting there to be read (40-49) 1-20. The VCR Get is a quick way of going to the screen the character read with Get. "X 2,2" is line 80 reads the screen to read from the keyboard and line 80 reads the line.

Using this program on both machines will allow simple transfer of information via the keyboard and screen. A more sophisticated system can be arranged along the same lines.

Note that this will only support one computer talking to another. More than this will confuse the RISC and you would need some electronics to disconnect the computer from the line when it is not using it and also to cancel it

I don't know of any articles that cover this subject, but other readers might. However, the above program should give you somewhere to start your research.

Team **Size** **Age**

4.1. Preparation of Reacting, Model-Active Systems

Q I have an IBM 5084 computer and have been using it with a custom TV. Recently, however, I have decided that I would like to use a color monitor and a friend who is getting rid of his Commodore system has offered to sell me this 1983 monitor at a very reasonable price. The trouble is that the 1983 has two video inputs on the back whereas the IBM has only one output. Would it be possible to connect the two together and if so, how?

A The Commodore output signal is split into two parallel colour information, and a single RGB video signal. The M80, however, puts out a composite signal in colour and video combined. What you need to do is take the composite signal from your M80 and feed it into both colour and video inputs on the monitor at the same time. This should give you a perfect colour copy.

Is there anything about your computer you don't understand, and which everyone else seems to take for granted? Whatever your problem, seek it to Karin Garroch and every week he will take back as many answers as he can. The address is **Peak & Peak, PCW, 12-13 Little Newport Street, London WC2N 7PP**.

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From Warsaw, Germany, Ireland and England

Mark Jenkins with readers' letters from the four corners of the world

I can't really believe that *Popular Computing* this month will miss magazines that I hope, we thought we'd start this week with some readers' letters from all over the world.

Jenna Zawadzki from Warsaw wants to know which synths and accessories he should choose to make up a great music system with a Casio/Greiner 128 which he's been using for six months. Well, he's thinking in terms of the Casio G2-101 as a basic synth.

The Casio has the advantage of a good software base for editing and Patch storage using software from Joseph and others. It also works well with the Casio RD-1 sampling drum machine, the G2-1 sequencer (although Joseph's step- or real-time software packages are probably a better bet here), and the new drum pad kit and interface which will allow you to play drum beats live or program them as part of a MIDI sequence.

I don't have any information sheets on the Casio equipment here but you can contact them at the address below for info on any of these products.

Over to Germany, and Angus Irons has written in to ask if Tommy Software of Frankfurt has a UK distributor yet. Tommy markets the Music 32 computer for the Atari 520 ST, which we reviewed a few weeks ago, and it in fact doesn't seem to have UK representation. But I have established that you can order its products by mail in Deutschmarks or dollars (at 1.0 DM to the dollar), that they charge 10 GSM packages, and that all orders have to be prepaid.

On to Northern Ireland where Mark McBrick is looking for Atari 520ST music software suitable for use with a Casio G23000, then sometime polyphonic synth. As you know from reviews over the last few weeks, there are about ten Atari sequencers from Hydril Arts, Synchronic Music will deliver them by mail including G2 Track and SMPX2 Reels, and from Steinberg (Pro 24 and a sequencer's version with built-in sampled drum sounds) and from Tota Note, the Dr 7 software series.

Back home to Bishop's Cleeveford and B. Hamman, who has a Ram Music Machine and a Casio G2101 and is thinking of getting a G23000. So how should they be connected together? What is a Slave and a Master, what is a

Slav Chain and a Time socket?

To deal with these briefly, the master synth is the one you plug, and the slave synths are the ones that are connected to it or to a sequencer which programs. The slaves can be keyboardless exper-



ment since you only have one pair of hands to play a keyboard with. A slav chain is a series of keyboards connected together via the MIDI Time sockets, which pass on all the incoming MIDI information to the last synth.

That doesn't mean to say that all synths in a chain will be doing the same thing. Because they can be set to any one of 16 MIDI "channels", they can be playing any one of 16 patterns which can be programmed via MIDI simultaneously, or doing nothing if they're set to a channel on which no activity is occurring.

The alternative to a slav chain is a star network, which can be used if some of your synths don't have Time sockets,

and can also put out the output of some sampling devices on larger sequels. But a star network does need a means of interlinking various outputs, or some kind of MIDI selector box.

In Figure 1, a master synth controls a slave module and they play the same notes provided that the slave is set to look at the MIDI channel which the master is transmitting on.

In Figure 2, a master synth programs notes into a multi-sequencer which then plays them back. The master synth plays any notes on its channel and ignores the rest - the information also goes from the Time socket to the slave synth which plays notes on its channel and ignores the rest.

In Figure 3 a master synth programs a multi-sequencer which then plays the master synth and six sequencer slaves all on to different channels - this is a star network.

J.G. Hobley of Laidlaw has just bought a Yamaha GX27, a full-size synthesizable 64 synth, and would like to link it to a G24 and choose a suitable drum machine. You can now buy a G24 interface from Steinberg, David Joseph or C-Data among others and all these companies have their own software except Data (the cheapest interface at the moment). My favourite package is C-Data Master Tools at around £100 but Steinberg's Pro 24 has a Realtime option if you're interested in getting out your music. All these are rather expensive, but the cheaper SSI and Jelfinghaus software is now unavailable in the UK.

As for drum machines, you can synthesise any sort of MIDI drum machine starting with the Roland TR808 or TR909 from a properly matched note and may be able to sync cheaper non-MIDI drum machines depending on which interface you choose.

Tommy Software, Mainzer Landstrasse 147, 601, West Germany.

Jenna Zawadzki 02685 631615.

Casio Electronics, Unit 6, 1000 North Circular Road, Slough, Slough, London W4Q 0JF 01-850 81211.

Synchronic Music, 24-26 Avenue Music, London W10 3NP 01-444 8726.

David Electronics, Units 8-9 Farnham Industrial Estate, Dunsbury Road, Farnham, Surrey GU10 2JH 01252 272815.



Party time, party line in the USA

Ben Knox tells you how Compuserve can put you in touch with computer enthusiasts all over the world

Yesterday, I went to a party. The party was held in the USA. To be precise, it was held in New York. It was also held in San Francisco, Chicago, Miami, London and Amsterdam.

It sounds like some kind of international pub crawl, but in fact, the party was an electronic one. The partygoers attended one thing or another, they were logged on to the 'CB Simulator', a part of the huge Compuserve Information Service which is based in Columbus, Ohio.

The CB Simulator allows anyone who is a member of Compuserve to "talk" to any other member, alone or in groups, by leaving messages in or from keyboards - wherever they are in the world.

national computer call then dialing direct by telephone. A telephone call to the US will cost up to \$60 per hour. A F55 call costs about £10 per hour. On top of these costs, you will have to pay the time charges associated with the services you are calling.

The first thing that strikes you when you get onto a US system is its size.

Compuserve runs on some 400-bit DEC minicomputers. It has upwards of 400 different services. These range from special interest groups (or forums) for different computers and software, through electronic mail, to the CB Simulator.

The forums are the place to go if you're looking for help with your computer, or if you want to download software.

Each forum has a number of areas. There is a messaging section, data libraries, a miniboard and a CB-style conference section.

The more popular forums have many hundreds, or thousands of members. Many of them are very knowledgeable and are more than willing to help sort out other users' problems.

Questions and answers are left in the message sections. If you leave a question, then it is a good idea to check into the forum regularly. Otherwise you might find the reply is quite over-the-top. The IBM forum can have 500 messages available at once and messages get overwritten every two or three days.

The data libraries are the place to look for software. In them, you will find hundreds of public domain and shareware programs available for you to download. If you do a lot of downloading of programs, you should try and contribute too. If other users have either a bad reputation on US systems, because they tend to make lots of downloads, but never upload anything.

You can contribute, often by uploading some British software (only public domain or shareware) or taking an active part in the messaging section of a forum. The extra usage will cost you money. Although Compuserve switches off its own charge when you are uploading. But, you are getting a great deal of quality software for very little cost, so a few pounds spent on public software shouldn't hurt too much.

Most forums use the CB facilities for regular weekly meetings where users can get to know each other.

Sometimes special CB conferences are arranged where personalities are available to answer questions from us-

ers. Barry Manilow was once a guest on the rock music forum. There have also been astronauts in the space forum, and therapists in the human sexuality forum and well-known politicians in the politician forum.

The most active area of Compuserve is the CB-simulator itself. CB is similar in concept to Chatline on Prodigy's Mainnet 800.

Compuserve's CB offers many facilities. For example, in keeping with the radio-based metaphor, it has channelled 35 of them in total. Up to 20 people can comfortably communicate on each channel. Any more, and it gets difficult to follow conversations.

Some channels are reserved for per-

"The first thing that strikes you when you get into a US system is its size - Compuserve offers upwards of 400 different services"

"Sometimes, special CB conferences are arranged where personalities are available to answer questions from users on specialised topics"

Computer information services for offered are very big business in the United States. Compuserve is the largest system, with some 350,000 members. Others include The Source, People-Link and Dolphin. All these systems display information in the ASCII scrolling text format. This is different from the format used by Prodigy based in Britain, which is called intelligent.

It is relatively easy for British computerisation enthusiasts to access these American services. In the same way that the international telephone network allows telephone users in different countries to talk to each other, computer networks enable computers to link up across country boundaries.

British Telecom's network is called Packet Switch Stream (PSS). To access a wide-area system, you simply dial the telephone number of your nearest PSS exchange. Then, after entering your ID, you type in the network address of the system you want to use.

After a few seconds you will be in contact with the system. It is much cheaper to use PSS to make an inter-

national internet channel call in the 'chat' channel, 17 or for message users, and 36 or for people who want to communicate privately.

Two users can go into private talk mode, where no-one else can talk in or what they are trying to talk with.

Additionally, for private group chats, there is a 'conference' mode. Only those people who have entered the same password can talk to each other.

You can keep an eye on what is happening on other channels using the monitor function. With the monitor, you can read the messages being sent on up to two channels, plus the one you are currently 'tuned into'.

There are two drawbacks with Compuserve. First, it has quite high connect time rates - between £5 and £15 per hour, plus F55 charges. Second, the company seems to find every way of taking on subscribers from overseas.

Anyway, if you want further information, contact Compuserve Information Service, 52000 Alhambra Center Boulevard, Ohio 43020, USA.

Next week we'll look at other US data bases, and what they offer.

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New Releases

John Cook looks through this week's new arrivals

Amiga

Program *Balance of Power* Type Strategy Price £39.95 **Supplier** Intercept, via Microsoft, Maxwell House, 14 Worthing Street, London EC2 2PL

Conversion from the award-winning Macintosh program was achieved a few months ago. It's difficult to explain how good this program is.

Played out on a map of the world, I've never got off Beginner Level yet and find it difficult to take in the vast amount of information the program puts at your disposal.

It's Russia vs America in global macro-politics, with the object to score prestige points from your opponents and expand/consolidate your sphere of influence.

I preferred the times more graphics on the Mac, but this is a faithful conversion, and is still one of those programs any serious games player cannot be without.

Program *Four Types Arcade Adventure* Price £1.98 **Supplier** Bulldog, Masterton, 8-10 Paul Street, London EC2

Excellent little title that has you fighting against another wizard. Collect the talismans, zap the wizard. And is there a jewel in the world that could resist the lure, 'Your glorious God'?

Program *Defender of the Crown* Type Strategy Price £12.95 (incl. VAT) **Supplier** PDS, 453 Strategy Square Road, Croydon CR9 3DQ

The latest addition to the PDS Wargames Series starts with a frighteningly playable build-up scenario in the instruction manual, based on an invasion led, I guess, against Israel. This causes a convenient confrontation that resolves issues on both sides, culminating in a Russian invasion of Israel/Germany.

The graphics and implementation look good, so play it now if you have the inclination. You won't have time to if it happens for real.

Program *The Growing Pains of Adam* Moby Type Adventure Price £9.95 **Supplier** Virgin Games, 3rd Floor Yard, Portobello Road, London W11 2QB

See Spectrum listing for comment.

Program *Agent Orange* Type Action/Strategy Price £9.95 **Supplier** ASF, Angus Press Southampton, Victory House, Lancaster Place, London WC2H 7HB

Can you survive in the quest to find the diamond wedding? Yes, I know it sounds silly, but seriously *Agent Orange* isn't bad.

A nice mixture of strategy, requiring a bit of planning (as is that planning) and the expected amount of violence.

Well worth taking a look at, if only to give credence to the above. So go a bit of wedding to go at the Duke Spinal Arm, next time you're asked to move the town.

Pick of the week

Best defence

Program *Defender of the Crown* Type Strategy/Arcade Moby Commodore Amiga Price £9.95 **Supplier** Microscape, via Microsoft, Maxwell House, 14 Worthing Street, London EC2 2PL

Occasionally you hear How Good do you need. This game is the most completely addictive thing ever, so go out and buy a primary to buy this, beautiful! It's only to find out as a retrospective a few minutes later that, 'Oh yeah - I think we overrated *Defender of the Crown*'.

Well, there but for the Grace of God, go - yet when I tell you that *Defender of the Crown* is the best ever, never wonderful, most detailed graphics of any game, ever, in the history of the whole world, then assured that I am raising my right hand on oaths of holy flames (Bible). None, but I'm pretty sure as many Mother's games as could be consistently accomplished in the office, my left hand is over my heart and I salute the God's Law even as I write. *Defender of the Crown* completely takes your breath away.

Microscape call it *Conquerors*, even suggesting that you sit pacemans while playing the game - and there goes it told to its virtues and its faults.

The game has strategy and

brutal elements, as you fly the part of a Saxen Lord who has vowed to overthrow the evil Norman conquerors. You can do this by campaigning with his army - carefully looking up as you buy slaves (even with resources from land) or combat or with local banding smut and gory war or other games.

You can even for land against other Lords - or just for the fun. Strategic action - fight for the hand of a lady. It's a great fun and usually satisfying, more often than not.

Don't expect a complete accuracy/wargame however - the massed ranks of Anglo-Saxon found a way of winning the game fairly easily but as a challenge for you Amiga - go, go, go! The three mind blowing colour screen shots - are next week's Supplement.



Amstrad CPC

Program *Imaginaire* Type Adventure Price £1.98 **Supplier** Antard Silver, 24 New Oxford Street, London WC1

See Spectrum listing for comment.



Atari ST

Program *Sylvia* Type Arcade Price £24.95 **Supplier** Long Arms, Covent Garden, London WC2E 8JH

Economic Arts overcomes that should be thought of as a colourful shenanigan up, rather than a light simulator. For the latter, go and grab *Sister Kate Hammer*.

C16/Plus 4

Program *Stone Type* Arcade Price £1.99 **Supplier** Masterton, 8-10 Paul Street, London EC2

The first *Dauntless* style game available for the C16. Unless you know different, that is.

Program *Minotaur* Moby Type Arcade Price £1.99 **Supplier** Masterton, 8-10 Paul Street, London EC2

3-D style arcade adventure with a race against time. Contains bombs, reflexion, and useful items. Just like real life really.

Commodore 64

Program *Moby Fears* Type Sports Simulation Price £4.99 (incl. VAT) £3.99 **Supplier** US Gold, Units 2/3 Hatfield Way, Hatfield, Birmingham B6 7AR

Program: Hyperlord Type Arcade Price £1.99 Supplier: Massesonic, 8-10 Paul Street, London EC2.

Consumers of previous *Flies of the Week*, a space-age genre football game, are in for a surprise. On the G4 the graphics are, as you might expect, superior - but the vector algorithms aren't quite up to the same standard. Yet with one or two plays and 10 different ship types to choose from, it's well a great buy.

Program: The Wings Type Arcade Price £8.95 Supplier: Status Software, Creative Sports Distribution, Unit 511, Airlinking Mall, Southwood Survival Centre, Southwood, Farnborough, Hampshire GU14 0NP.

Another release from Status, Creative Sports' full price title - features from the Southwood's Role Line. Quite simple, this game is set up in full price quality - with the interference of the sports class divisions of the series as *Chase A*, it is.

Essentially a *Commander* where it's not about elements locked on, it's an immediately think of two budget games (*Final* and *Super Hero*) that would do you just as well. Not good.

Program: Cyber Type Arcade Price £2.99 Supplier: Super Sparkles, Creative Sports Distribution, Unit 511, Airlinking Mall, Southwood Survival Centre, Southwood, Farnborough, Hampshire GU14 0NP.



This is more than a right-level budget item. Again from Status-Live, but the title screen also features a certain *Star Systems* as joint copyright holders and the name Cyberlord crops up in the title and second level. Work that one out if you can.

Program: Agent Omega Type Arcade Price £8.95 Supplier: A&P, Argus Press Software, Victory House, Leicester Place, London WC2H 7HQ.

See Amstrad CPC testing for comment.

Program: The Mystery of the Lost Ship Type Adventure Price £8.00 (real order only) Supplier: Central Computing, 61 South Road, Gillingham, Dorset, Dorset DT9 8DQ.

Program: The Sport of Kings Type Simulation Price £2.99 Supplier: Massesonic, 8-10 Paul Street, London EC2.

A day at the races for up to 16 players - a superbly rare afternoon material, also ideal after a happy season down the pub.

Program: Magic Madhouse Type Arcade Adventure Price £7.95 (up to £8.95) Supplier: Amco Software, 35 West Hill, Dorford, Kent DA1 2DL.

Program: On and On Type Arcade Price £1.99 Supplier: Finbar Silver, 34 New Oxford Street, London WC1.

Fairly standard 'jumpy' jump called the objects 'bride-style' game, with a touch of humour that makes a good job. It's been in the Spectrum charts for five months - if that means anything.

Program: Imagination Type Adventure Price £1.99 Supplier: Finbar Silver, 34 New Oxford Street, London WC1.

Program: The Growing Place of Action Mode Type Adventure Price £8.95 Supplier: Virgin Games, 274 Vernon Road, Portobello Road, London W11.

See Spectrum testing for comment.

Program: Alter Type Arcade/Strategy Price £9.95 Supplier: Finbar Silver, 34 New Oxford Street, London WC1 2DL.

This week sees the arrival of the delayed Commodore 64 version of the celebrated game of the move. Delayed because this didn't start in the first time, so they wrote it again. The final result is excellent, highly recommended here for the under-stressed.

MSX

Program: Winner Events Type Sports Simulation Price £8.95 Supplier: Amco Software, 35 West Hill, Dorford, Kent DA1 2DL.

Simulated snow sports for 1-4 players. The Hobbes section part an immediate recommendation for the PCW 'Winter Games' - over 1000 of a year, dated 1987) for comparison to the selective unconscious.



PC and Compatibles

Program: Office Secret Type Spreadsheet Price £17.99 Supplier: RS Associates, Dale House, Dale Street East, Ashton-Under-Lyne, Lancs OL8 7TE.

Primarily a budget spreadsheet program - but with a text editor and a few macro-style commands.

Spectrum

Program: Life After Type Arcade Adventure Price £1.99 Supplier: Sparkles, Creative Sports Distribution, Unit 511, Airlinking Mall, Southwood Survival Centre, Southwood, Farnborough, Hampshire GU14 0NP.

Program: Quick Hand Type Arcade Price £2.99 Supplier: Advance Software, 17 Stupa Type, Harlow, Essex CM18 7LS.

Humorous, rocky-like of the *RemoCade* style games, with an action of platform and ladder themes in.

Program: Agent Omega Type Arcade Price £8.95 Supplier: A&P, Argus Press Software, Victory House, Leicester Place, London WC2H 7HQ.

See Amstrad CPC testing for comment.

Program: Ford Type Arcade Adventure Price £1.99 Supplier: Bulldog, Massesonic, 8-10 Paul Street, London EC2.

Spectrum 128/Plus 2

Program: Life Computer Arcade Type: Per Simulation Price £8.95 Supplier: Advance Software, 17 Stupa Type, Harlow, Essex CM18 7LS.

The program that changed Commodore users now reaches the Spectrum Plus 2. There is no denying that it doesn't look quite as cute on the format, but all the major features are there.

Program: The Kingdom of Kell Type Gothic Adventure Price £9.95 Supplier: Amco Software, 35 West Hill, Dorford, Kent DA1 2DL.

Illustrated adventure for the 128/Plus 2. Looks interesting, look out for a review soon.

The search for perfect software

The astonishing advancement in hardware power over the last few years is of benefit to every potential user as the specifications rise and the prices drop, but one notable aspect of this situation is how little the standard of software has risen in relation to the computers themselves.

In the days of the ZX81, just before its demise and subsequent replacement by the ZX Spectrum, the software had achieved a high standard, to the extent that we had high resolution graphics arcade games selling every mile of memory.

I can honestly say that since those days I have not seen a single item of software that utilises the potential of the machine to an absolute maximum.

With the public acceptance of downmarket budget software, even a simple 'wire graphics' arcade game such as *Elite* can be admired for its supposed high standards of graphics.

As the other extreme there has been a form of hardware add-on, where we are lashed down on for using a machine that is not designed to be used in the art.

As a programmer writing software for vertical applications, I was required to produce a program for soft furnishing and department stores, whereby the user could input some basic information, ie, the window size and the cost of the curtain fabric, then a few simple calculations had to be made and

the price of the curtains displayed on the screen.

There were several other software companies in this field, achieving very limited sales. The major point that these companies seemed to have forgotten, is that the average shop sales assistant is not computer literate, does not wish to mess around with floppy discs and has a fear of any computer larger than a pocket calculator.

Realising this I moved I contacted Casio Electronics which produces a large range of pocket computers with small display screens and capable of being programmed in Basic or machine code. These machines could sell for under £100 with the software built in Rom and available as soon as the On button was pressed. We sold several hundred of these machines.

The reason I mention this is, why use a megahertz micro to crack a nut? These are low cost, down market machines, but ideal for just this sort of basic purpose.

I would like to see computers made to suit the software for which they are required. The Amstrad PCW was a perfect example. Technically it was behind, but for commercial and practical purposes it has become one of the most successful machines in existence. The one phrase that this industry should always bear in mind is, "Software or application first, hardware second".

No-one ever expected the Day to become a mass market consumer product and so

a less extreme example we have machines like the Amiga, which unless drastically reduced in price, will end up as a powerful but discarded white elephant.

For the average potential computer user, there must be a valid reason to buy a micro. Those who type letters can see clearly the advantages of buying the Amstrad PCW, and the machine was marketed primarily for that purpose. To try to explain the capabilities of an Amiga would leave many people totally unimpressed. The very first question I am asked by family and friends when showing off my latest computer is, "What does it do?"

This is the very same question each manufacturer should ask before launching a product.

Until the day that home computers can communicate with perfect speech synthesis and recognition, produce printouts in typesetting quality, have on-line monitoring over all house appliances, bars and building society accounts, automatically issue birthday, anniversary cards and reminders to all friends and relatives, link to my car and provide travel news, best routes and routine maintenance, link to my Video recorder and record any program that I might find interesting, link to every form of reference in the world for unlimited information on any topic, and could sell for under £500; until that day, let us at least have some decent software.

D Richardson

NEXT WEEK

Special Supplement Adventures

Check up on the very latest news and reviews in adventures in our supplement.

Megahits - Tony Briggs has hundreds of tips for all the most baffling games on the market.

The Rainbow file - we look at the latest offerings to be published by Rainbow, the brand new Ruger One from Level 9, plus *Elbow Dreams* on ST and *Spantown*, and the Amstrad PCW Power.

Defender of the Crown - the most spectacular historical simulation ever? From Microsoft, on the Amiga.

Role Playing Games - a survey of the genre and how to get involved.

US databases

Ben Kinn brings you the second part of his series on the big US networks.

Chess Board

Martin Bryant discusses chess ratings and how they are evaluated - for both human and computer players.

Hackers



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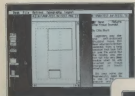
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